United Nations
ECLAC

ECLAC SUBREGIONAL HEADQUARTERS FOR THE CARIBBEAN

FOCUS

Magazine of the Caribbean Development and Cooperation Committee (CDCC)

AN INTEGRATED APPROACH TO ICT

ISSUE 4 / OCTOBER - DECEMBER 2018

ABOUT ECLAC/CDCC

The Economic Commission for Latin America and the Caribbean (ECLAC) is one of five regional commissions of the United Nations Economic and Social Council (ECOSOC). It was established in 1948 to support Latin American governments in the economic and social development of that region. Subsequently, in 1966, the Commission (ECLA, at that time) established the subregional headquarters for the Caribbean in Port of Spain to serve all countries of the insular Caribbean, as well as Belize, Guyana and Suriname, making it the largest United Nations body in the subregion.

At its sixteenth session in 1975, the Commission agreed to create the Caribbean Development and Cooperation Committee (CDCC) as a permanent subsidiary body, which would function within the ECLA structure to promote development cooperation among Caribbean countries. Secretariat services to the CDCC would be provided by the subregional headquarters for the Caribbean. Nine years later, the Commission's widened role was officially acknowledged when the Economic Commission for Latin America (ECLA) modified its title to the Economic Commission for Latin America and the Caribbean (ECLAC).

Key Areas of Activity

The ECLAC subregional headquarters for the Caribbean (ECLAC/CDCC secretariat) functions as a subregional think-tank and facilitates increased contact and cooperation among its membership. Complementing the ECLAC/CDCC work programme framework, are the broader directives issued by the United Nations General Assembly when in session, which constitute the Organisation's mandate. At present, the overarching articulation of this mandate is the Millenium Declaration, which outlines the Millenium Development Goals.

Towards meeting these objectives, the Secretariat conducts research; provides technical advice to governments, upon request; organizes intergovernmental and expert group meetings; helps to formulate and articulate a regional perspective within global forums; and introduces global concerns at the regional and subregional levels.

Areas of specialization include trade, statistics, social development, science and technology, and sustainable development, while actual operational activities extend to economic and development planning, demography, economic surveys, assessment of the socio-economic impacts of natural disasters, climate change, data collection and analysis, training, and assistance with the management of national economies.

The ECLAC subregional headquarters for the Caribbean also functions as the Secretariat for coordinating the implementation of the Programme of Action for the Sustainable Development of Small Island Developing States. The scope of ECLAC/CDCC activities is documented in the wide range of publications produced by the subregional headquarters in Port of Spain.

MEMBER COUNTRIES

Antigua and Barbuda
The Bahamas
Barbados
Belize
Cuba
Dominica
Dominican Republic
Grenada
Guyana
Haiti
Jamaica
Saint Kitts and Nevis
Saint Lucia
Saint Vincent and the Grenadines
Suriname
Trinidad and Tobago

ASSOCIATE MEMBERS:

Anguilla
Aruba
British Virgin Islands
Cayman Islands
Curaçao
Guadeloupe
Martinique
Montserrat
Puerto Rico
Sint Maarten
Turks and Caicos Islands
United States Virgin Islands

CONTENTS

FOCUS: ECLAC in the Caribbean is a publication of the Economic Commission for Latin America and the Caribbean (ECLAC) subregional headquarters for the Caribbean/Caribbean Development and Cooperation Committee (CDCC).

EDITORIAL TEAM:

Director	Diane Quarless, ECLAC
Editor	Alexander Voccia, ECLAC
Copy Editor	Denise Balgobin, ECLAC
Coordinator	Alexander Voccia, ECLAC
Design	Blaine Marcano, ECLAC

Cover Photo: Courtesy Pixabay.com

Produced by ECLAC

CONTACT INFORMATION

ECLAC Subregional Headquarters for the Caribbean
PO Box 1113, Port of Spain, Trinidad and Tobago
Tel: (868) 224-8000
E-mail: spou-pos@eclac.org Website: www.eclac.org/portofspain

DIRECTOR'S DESK:
MULTIFACETED BENEFITS OF AN INTEGRATED APPROACH TO ICT

The scale and ambition of the Sustainable Development Goals (SDGs) require innovative approaches to development. Information and Communication Technology (ICT) lies at the heart of such innovation.

This issue of FOCUS presents the many, varied benefits that an integrated approach to ICT can offer Caribbean States in support of sustainable development. We will explore in particular the role that ICT can play in helping to address three distinct challenges that affect sustainable development within our subregion: the impact of geographical distance within multi-island jurisdictions; the vulnerability of Caribbean States to disasters; and the difficulties encountered by youth in their effort to participate meaningfully in the decision-making processes that shape the development of the subregion.

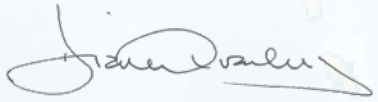
Populations in several Caribbean jurisdictions often face high transportation costs and a greater degree of difficulty in accessing public services. In an effort to overcome these challenges, Caribbean governments have begun using e-governance to better reach and serve their populations. In this regard, Jamaica recently announced its plan to become the first fully digitized government in the region, where all public services can be accessed online. However, the benefits of these efforts are limited by the degree of internet access available. Levels of access vary between countries in the Caribbean, mostly reflecting their respective levels of economic development. And even where such internet access exists, use of this technology does not always follow due to issues of affordability, technical capacity and relevant local content. In this FOCUS, we argue that where governments lack the requisite resources, ICT infrastructure can be built through public-private partnerships and infrastructure-sharing arrangements. A regional approach to developing e-governance could also be mobilized through multilateral cooperation in procurement, capacity building, and industrial development for the ICT sector.

Telecommunications also play an essential role in providing support for disaster preparation and response. The vulnerability of Caribbean islands to extreme weather events during the annual Atlantic tropical cyclone season is of course very well known. Most wired telecommunications infrastructure (cables and microwave dishes) and some elements of wireless communications (cellular towers and antennae) are routinely among the high-tech articles highly vulnerable to damages or destruction by gale force winds. Is it possible to ensure that such infrastructure in the Caribbean meet higher standards of resilience? There is no doubt that a reliable telecommunications architecture supported by stable infrastructure, flexible policy and clear coordination practices increase governments' efficiency in responding to these disasters. ICTs can also enhance risk identification, risk reduction, preparedness, financial protection and resilient recovery.

The participation of youth in sustainable development decision-making in the Caribbean can also be enhanced through the use of social media and other innovative ICT solutions. This FOCUS presents the success story of the ongoing Youth Dialogue Series to illustrate the potential role of online platforms in fostering direct engagement with young people, with very positive outcome in brokering direct interaction between senior government officials and youth.

It is our hope that this edition stimulates interest in the ever-evolving contribution that technology can make towards the achievement of sustainable development in the Caribbean.

Yours in Focus



Diane Quarless

LEVERAGING ICTS, E-GOVERNANCE AND KNOWLEDGE MANAGEMENT FOR THE SUSTAINABLE DEVELOPMENT OF MULTI-ISLAND STATES AND TERRITORIES IN THE CARIBBEAN

Amelia Bleeker *

With the adoption of the 2030 Agenda for Sustainable Development, United Nations Member States pledged to address the needs of the most vulnerable.[1] Geographic remoteness or separation is one of the key reasons that not all people benefit equally from development efforts.[2] This is of particular concern among Small Island Developing States (SIDS), including those of the Caribbean and the Pacific.

Of the 26 programme countries served by the ECLAC subregional headquarters for the Caribbean, 23 are island States and territories. At least 38 per cent of these can be described as multi-island countries, where the population lives on separate land masses.

Information and Communications Technology (ICT)[3] and Knowledge Management (KM)[4] can advance the sustainable development of multi-island countries by extending the reach and access of information and public services to geographically dispersed populations. Lack of access to technology, such as computers, internet and wireless technology, exacerbates barriers of distance for populations in small or remote islands. The strategic application of ICTs and KM can reduce these barriers and act as an important equalizer, improving efficiency in the delivery of government services. ICTs and KM can also be used to promote climate-change friendly economic growth and to build resilience to economic shocks and natural disasters.[5] Caribbean governments have already started to embrace e-governance[6] and to implement regional and national initiatives to improve connectivity and access to government in the subregion.[7]

CHALLENGES AND OPPORTUNITIES OF MULTI-ISLAND CARIBBEAN STATES AND TERRITORIES

The unique characteristics of multi-island Caribbean States and territories create both challenges and opportunities for their sustainable development. These countries are made up of one or more islands, some of which are small and spread over a large distance.

Multi-island countries also tend to have high public service costs as well as small domestic markets vulnerable to external shocks and natural disasters and difficulties creating economies of scale due to high transportation and production costs. The extent of the challenges resulting from these characteristics varies between countries. However, populations in small or remote islands can experience high transportation costs and poor quality and availability of public services.

Economic development outcomes in multi-island States and territories are nonetheless mixed, showing that each multi-island State or territory finds its own solutions to overcoming these challenges, and that size and geography are not always constraints to economic development.[8] In some cases they can be overcome through public policies, aimed at resilience building and economic transformation.[9] In particular, ICTs and KM can create 'virtual bridges' nullifying physical distance, thereby offering solutions to the problems posed by the size and distance between islands in multi-island countries.

* Amelia Bleeker is an Associate Programme Management Officer at the Caribbean Knowledge Management Centre of the Economic Commission for Latin America and the Caribbean, Subregional headquarters for the Caribbean, Port of Spain, Trinidad and Tobago.

[1] UNGA (2015), Transforming our world: the 2030 Agenda for Sustainable Development (UN Res A/RES/70/1), New York.

[2] UNDP (2018) [online], What does it mean to leave no one behind? A UNDP discussion paper and framework for implementation, July 2018, <http://www.undp.org/content/dam/undp/library/Sustainable%20Development/2030%20Agenda/Discussion_Paper_LNOB_EN_lres.pdf> [20 November 2018].

[3] At their most basic, ICTs are tools used to produce, store, process, distribute and exchange information. The 'old' ICTs were radio, television and telephone, while newer technologies include computers, satellite and wireless technology and the internet.

[4] According to the UN Joint Inspection Unit, KM is "the systematic processes, or range of practices, used by organizations to identify, capture, store, create, update, represent and distribute knowledge for use, awareness and learning across the organization." (UN Joint Inspection Unit (2016), Knowledge Management in the United Nations System (JIU/REP/2007/6, para. 21), Geneva.)

[5] Inter-American Development Bank (IDB) (2018) [online], Technology for Climate Action in Latin America and the Caribbean, <https://publications.iadb.org/handle/11319/8966> [20 November 2018].

[6] E-governance is the use of ICTs by government agencies.

[7] UN DESA (2018), United Nations E-Government Survey 2018: Gearing E-Government to Support Transformation towards Sustainable and Resilient Societies, New York.

[8] UNDP Global Centre for Public Service Excellence (2014) [online], Small, So Simple? Complexity in Small Island Developing States <http://www.undp.org/content/dam/undp/library/capacity-development/English/Singapore%20Centre/GPCSE_Complexity%20in%20Small%20Island.pdf> [20 November 2018].

[9] Bulmer-Thomas, V. (2001), 'The Wider Caribbean in the 20th Century: A Long-run Development Perspective,' Integration and Trade 5(15), pp. 5-56.

CURRENT ACCESS TO AND USE OF ICTS, E-GOVERNANCE AND KM IN THE CARIBBEAN

Caribbean countries have relatively comprehensive ICT infrastructure. National networks are typically made up of a combination of fibre-optic, copper and wireless technologies.[10] Most countries are also rolling out third-generation and fourth-generation wireless technologies to support mobile broadband internet.

There has been steady investment in submarine cable systems to increase broadband width and to better connect the Caribbean with the Americas. The expansion of mobile technology in the subregion, in conjunction with newly established wireless networks and service providers offering a range of data plans, has been a major contributor to increased internet adoption and use. Yet more than half of households in the Caribbean still lack access to the internet.[11] Levels of access vary between countries, mostly reflecting their varying levels of economic development. In 2014, only 11 per cent of Haitians had internet access compared to almost 80 per cent of the population in Barbados and the Bahamas.[12] Quality of access is also an issue in the subregion, with connection speeds improving but not keeping pace with the rest of the world. At the national level, internet penetration is poorer in rural areas than urban, and rich households are more likely to have internet access than those in the poorest quintile of income distribution.[13]

Where internet access exists, use of this technology does not always follow due to lack of affordability, skills or relevant local content. This disparity between access and use particularly affects women and marginalized groups, such as persons with disabilities.[14] While internet access figures show parity among men and women, the use of internet remains unequal, with men eight percentage points ahead of women in some countries.[15] ECLAC research also shows that internet use by persons with disabilities in the Caribbean lags behind that of persons without disabilities, even after accounting for age differences of persons with and without disabilities.[16]

Caribbean governments have begun using e-governance and KM to reach their populations, yet the effectiveness of efforts has been mixed and use of these tools is inconsistent.[17] Revenue-collecting agencies were among the first areas of government to implement e-government systems, but there has also been an increased focus on e-government initiatives supporting health and education. For example, the Ministry of Health in Turks and Caicos Islands is currently working with the Pan-American Health Organization (PAHO) to establish electronic health record and information systems. CARICOM's Single ICT Space project encourages the Caribbean community to "streamline information sharing and content management between Governments, their employees, citizens and clients" but this is yet to become a business-as-usual approach in the region.[18] However, some countries are leading the way with, for example, Jamaica recently announcing its plan to become the first fully digitized government in the region where all public services can be accessed online.[19]

Of the Caribbean countries included in the 2018 UN E-Government Survey, most had reached the 'high' or 'middle' level of the E-Government Development Index (EGDI), with Jamaica and Grenada having 'very high' EGDI levels. The EGDI measures the readiness and capacity of national institutions to use ICTs to deliver public services and is a composite of telecommunications infrastructure, human capital and online services indexes. All Caribbean countries had improved their EGDI scores in the 2018 survey when compared with the 2016 results. However, an ECLAC study has noted that the EGDI may in fact overstate Caribbean performance in the deployment of e-government services as it gives substantial weight to metrics that are not directly related to the implementation of e-governance.[20]

▸ (continued on page 6)

[10] Internet Society (2017) [online], Unleashing the Internet in the Caribbean: Removing Barriers to Connectivity and Stimulating Better Access in the Region, p. 33 <https://www.internetsociety.org/wp-content/uploads/2017/08/ISOC_Unleashing_Internet_in_Caribbean_20170221.pdf> [20 November 2018].
[11] ECLAC (2017), State of broadband in Latin America and the Caribbean 2017 (LC/TS.2018/11), Santiago. This statistic also includes Latin American countries.
[12] Internet Society (2017), p. 44.
[13] ECLAC (2017).
[14] EECLAC (2018), Information and communications technologies for the inclusion and empowerment of persons with disabilities in Latin America and the Caribbean (LC/TS.2018/48), Santiago.
[15] ECLAC (2017).
[16] ECLAC (2018).
[17] ECLAC (2016), Regional approaches to e-government initiatives in the Caribbean (LC/CAR/L.483), Santiago.
[18] CTU (2017) [online], Vision and Roadmap for a CARICOM Single ICT Space, p. 21 <http://www.ctu.int/wp-content/uploads/Projects/21stCenturyGovernmentProject/Vision-and-Roadmap-for-a-Single-ICT-Space-Final-Version-UPDATED.pdf> [20 November 2018].
[19] See Jamaica Information Service (2017) [online], 'Jamaica Looking to Establish Region's First E-Government System – PM', 11 June 2017 <https://jis.gov.jm/jamaica-looking-establish-regions-first-e-government-system-pm/> [20 November 2018].
[20] ECLAC (2016).

▸ (continued from page 5)

LEVERAGING ICTS, E-GOVERNANCE AND KNOWLEDGE MANAGEMENT FOR THE SUSTAINABLE DEVELOPMENT OF MULTI-ISLAND STATES AND TERRITORIES IN THE CARIBBEAN

USING ICTS, E-GOVERNANCE AND KM TO ADDRESS THE CHALLENGES OF MULTI-ISLAND STATES AND TERRITORIES

The SIDS development agenda, the Samoa Pathway, recognizes that "access by SIDS to appropriate reliable, affordable, modern and environmentally sound technologies is critical to achieve their sustainable development objectives."[21] However, implementing ICT infrastructure and KM systems in the Caribbean is not always straightforward, due to the small population size of some islands and the resource intensity of this exercise.

Nevertheless, the investment in ICT infrastructure necessary to establish e-governance services should not deter governments, as they stand to benefit long-term from greater economic diversification and improved institutional capacity. There is growing evidence of the link between green economic growth, job creation and investment in telecommunications, particularly broadband services.[22] Integrated use of ICTs and KM across all levels of government and in the private sector also plays a fundamental role in improving education and healthcare.

As a region prone to natural disasters, the Caribbean stands to further benefit from improving its ICT infrastructure for resilience building. Countries are encouraged to use ICTs during all phases of disaster risk management to reduce risk and impact and to maintain gains made towards e-governance and the SDGs.[23] Examples of ICTs being used in the Caribbean for disaster risk management can be found in CCRIF SPC (formerly known as the Caribbean Catastrophe Risk Insurance Facility).[24] Formed in 2007, it is a regional catastrophe fund for Caribbean and some Central American governments, designed to limit the financial impact of hurricanes, earthquakes and flooding by quickly providing financial liquidity. It uses a variety of ICT and KM tools to maintain its catastrophe risk model and compile country risk profiles and databases on risk exposures.

Where governments do not have the resources, ICT infrastructure can be built through public-private partnerships and infrastructure-sharing arrangements. In addition, a subregional approach to developing e-governance could be used through multilateral cooperation in procurement, capacity building, and industrial development for the ICT sector.[25] This would enable the sharing of investment costs and economies of scale. Subregional projects already exist to improve the availability of the internet, such as the Caribbean Regional Communications Infrastructure Programme (CARCIP) initiated by the World Bank and coordinated by the Caribbean Telecommunications Union (CTU).[26] In addition, CARICOM's Single ICT Space project aims to create an ICT-enabled borderless space that fosters economic, social and cultural integration for the betterment of Caribbean citizens.[27] If national standards can be aligned to create a set of regional standards, Caribbean governments could also work together to formulate a common e-government plan and to adopt subregional e-governance software and KM systems.

Creating high-quality ICT infrastructure is only the first step towards using ICTs to reach remote corners of multi-island States and territories. These countries must also foster a culture of innovation in governance and public service delivery to keep pace with ever-changing technology and users' needs. Many Caribbean ministries, departments and agencies take a siloed approach to public service delivery resulting in duplication of resources and effort, along with the adoption of different ICT systems and lost opportunities for coordination and collaboration.[28] States must move to a unified whole-of-government model to exploit the potential of ICTs and to deliver services in a coordinated manner.[29] Such an approach requires government agencies to work together

[21] UNGA (2014), SIDS Accelerated Modalities of Action (SAMOA) Pathway (UN Res A/RES/69/15), Apia, Samoa, para. 110.
[22] See, for example, Minges, Michael (2015) [online], Exploring the Relationship Between Broadband and Economic Growth, http://pubdocs.worldbank.org/en/391452529895999/WDR16-BP-Exploring-the-Relationship-between-Broadband-and-Economic-Growth-Minges.pdf [26 November 2018]. World Bank.
[23] UN DESA (2018), United Nations E-Government Survey 2018: Gearing E-Government to Support Transformation towards Sustainable and Resilient Societies, New York, p. 52.
[24] For more information, see <https://www.ccrif.org/> [20 November 2018].
[25] ECLAC (2016).
[26] For more information, see <http://www.ctu.int/projects/caribbean-regional-communications-infrastructure-programme-carcip/> [20 November 2018].
[27] CTU (2017) [online], Vision and Roadmap for a CARICOM Single ICT Space, <http://www.ctu.int/wp-content/uploads/Projects/21stCenturyGovernmentProject/Vision-and-Roadmap-for-a-Single-ICT-Space-Final-Version-UPDATED.pdf.
[27] See also: https://jis.gov.jm/jamaica-looking-establish-regions-first-e-government-system-pm/> [20 November 2018].
[28] ECLAC (2016), p. 36.
[29] UN DESA (2018), United Nations E-Government Survey 2018: Gearing E-Government to Support Transformation towards Sustainable and Resilient Societies, New York, p. 3.

across portfolio confines, rather than operating as isolated silos.

A whole-of-government approach is also a crucial precondition for the integrated use of KM tools and processes across government. These processes and tools offer "a framework to uncover, further develop and unleash the creative, traditional and rich cultural heritage and traditional knowledge of the Caribbean."[30] In the multi-island country context, KM can provide remote islands with the tools to leverage the larger human resource pool, knowledge base and experiences of other islands, and of the country as a whole, to overcome the challenges associated with size, geography and resource constraints. This relies on robust, reliable communication links to all inhabited islands and on data being publicly available in an easily accessible form and timely manner.

The development of ICT infrastructure and e-governance systems in multi-island States and territories is not without its challenges. However, having the population of a country divided across several land masses does not necessarily result in poor development outcomes. If Caribbean countries are open to collaborating with other governments in the region, through ICTs and KM, these will have great potential to accelerate progress and address the needs of the most vulnerable. ■

[30] ECLAC (2010), Knowledge Management for Development: Towards a practical approach for the Caribbean (LC/CAR/L.234/Rev.1), Port of Spain.

DAMAGE AND LOSS ASSESSMENT RECOMMENDATIONS FOR MAXIMIZING THE RELIABILITY OF THE TELECOMMUNICATIONS SECTOR

Blaine Marcano*

Disasters disrupt the lives of communities and individuals, and often interrupt the economic activity of the affected society. With every social and economic structure affected by disaster holding its own importance, the Economic Commission for Latin America and the Caribbean (ECLAC) has identified telecommunications as playing an essential role in providing support for disaster preparation and response as well as for various types of economic and social enterprise.

Moreover, the need for the services within the telecommunications sector typically increases immediately before, during and after a disaster, emphasizing this key role.

Disasters are a consequence of natural phenomena (e.g. hurricanes, earthquakes) which unleash processes that lead to physical damage and the loss of human lives and capital. A disaster can also result from man-made activity (e.g., wildfire, disease) which may have consequences in terms of damage and loss of life. In its effort to support Caribbean Member and Associate Member States, ECLAC provides assessments of the economic effects of disasters across Latin America and the Caribbean.[1] These Damage and Loss Assessment (DaLA) missions have provided keen insights into the workings of the telecommunication sector in the Caribbean region, its vulnerabilities and some of the possible means of addressing these vulnerabilities.

TELECOMMUNICATIONS

Most of the communication between persons, between organizations (including government), and within organizations are based on three types of telecommunication activities; wired activity, wireless activity and satellite services.

These three major activities, taken along with television, radio broadcasting and information services such as websites, are how information is shared to mobilize efforts both before and after a disaster.

Wired telecommunication is categorized as such because of its reliance on infrastructure and components such as fiber optic cables, copper cables, switches, microwave relays and internet backbone. These components are the foundation upon which services such as fixed land line telephone, fixed broadband internet and cable television are delivered to the public in various forms.[2] Wireless telecommunication services such as cellular voice, cellular text, cellular data and fixed wireless broadband are based on components such as various types of antennae, dishes and base transceiver stations. These components are particularly important to note because they are the fundamental physical assets that are affected by disasters, and which ultimately result in the disruption of communication services. Satellite activities, one of the other main types of telecommunication activity, has components that are usually outside the range of disasters (space-based communications satellites). The components used for television and radio broadcasting services are usually built upon structures like those used for wireless telecommunication services and can therefore be considered in the same manner.

Infrastructure supporting telecommunications are usually tailored to suit the geographic challenged that must be overcome to bring persons together. Thus, islands with geographical features as diverse as the Caribbean's, demand more infrastructure and as it follows a relatively high infrastructure costs. Given that the infrastructure costs in the Caribbean are relatively high compared to comparable populations, there is a temptation to minimize costs, especially as these expenses lead to an increase in the cost of telecommunication services.

Care must be taken not to minimize costs at the expense of resilience. Instead, prudent planning can assist in making costly investments in infrastructure both worthwhile and resilient to disasters. A reliable telecommunications architecture made up of stable infrastructure, flexible policy and clear coordination practices can enable a society to be efficient at responding to disasters. Conversely, scenarios characterized by infrastructure failure, nonexistent policy and uncertain lines of communication may likely result in unwanted additional effects and unexpected costs.

THE VULNERABILITY OF CARIBBEAN SIDS TO DISASTERS

Caribbean societies are particularly vulnerable to natural disasters. Extra attention must be paid to protect the vulnerability of the telecommunications sector so that it can fulfill its role in reinforcing other major sectors of the economy.

* Blaine Marcano is a Public Information Assistant at the Economic Commission for Latin America and the Caribbean, Subregional headquarters for the Caribbean, Port of Spain, Trinidad and Tobago.

[1] FOCUS Magazine 2018, Issue 1.

[2] Note: The power distribution network of poles is of equal importance to wired telecommunications activities as this infrastructure is typically shared with telecommunications service providers.

Caribbean islands are consistently under the threat of extreme weather events since the geographic area is highly exposed to the development of Atlantic tropical storms every year between the months of June and November (known as the hurricane season). In addition to their vulnerable location, Caribbean islands are noted for their relatively small populations and small-scale economies. These small economies are prone to negative external economic shocks and are highly reliant on external financial inflows[3] making them even more vulnerable to the effects of disasters. Thus, by virtue of these characteristics, Caribbean islands stand a significant chance of being affected by a disaster that can cause economic impacts that are both severe and enduring. With this reality in mind, Caribbean SIDS are increasingly striving to integrate disaster risk reduction practices into national development planning in order to position themselves to better withstand the impacts of future events. The Global Framework on Disaster Risk Reduction (GFDRR) provides a road map to achieving this.[4] It posits five cross-cutting pillars of action: risk identification, risk reduction, preparedness, financial protection, and resilient recovery. Taken together, the pillars provide a framework that can apply not only to the recurring threat of tropical cyclones, but to any Caribbean State's long-term imperative of mitigating and adapting to the effects of climate change and sea-level rise.

The telecommunications sector is of key importance to a society in its efforts to prepare for and respond to the effects of disasters, and should be considered an important point of departure for improving resilience. Telecommunications services and infrastructure can be understood to link major sectors and activities in the way tendons link bones together. Reinforcement provided by the telecommunications sector can therefore make a major difference in the recovery of other major sectors such as the tourism and business sectors.

RISK IDENTIFICATION

Risk identification suggests that, to manage disaster risks, it is first necessary to understand the hazards, exposure and vulnerabilities faced by a community.

Tropical cyclones (storms and hurricanes) are by far the most frequently occurring natural hazard in the Caribbean region. As such, most wired telecommunications infrastructure (cables and microwave dishes) and some elements of wireless communications (cellular towers and antennae) are highly vulnerable to being damaged or destroyed by gale force winds. Extra care should therefore be put into making sure that these infrastructures meet higher standards of resilience. Base transceiver stations, which are a major component of wireless networks, are also susceptible to wind and water damage and should therefore be well insulated from the extreme weather, ensuring that materials used are of a high standard.

Rooftop cellular installations and lightweight, relatively inexpensive antenna masts have proven to be a low cost and convenient means of providing cellular service in urban areas. However, in most cases, these installations are destroyed or severely damaged during tropical cyclones, rendering them inoperative. As a result, this type of infrastructure may provide financial savings in the short term, but brings with it the cost of vulnerability and loss of service in the event of a disaster.

Periodic inspections of physical assets such as utility poles, cellular towers and antennae can be a useful practice for encouraging maintenance of infrastructure as well as for assisting in identifying potential risks. Government planning offices can be made to play a role in this regard by ensuring that newly erected towers are removed from built-up areas where damage can be done to other important surrounding buildings or infrastructure.

RISK REDUCTION

Risk reduction includes the instruments such as policies and investment programs aimed at resilience which are critical to reducing existing risks and preventing new ones from arising.

In support of the development of a more resilient telecommunications network, governments, can encourage high standards of infrastructure construction as a basis for receiving a license. Another incentive may be tax-based, where rates paid by telecommunications service providers to the government are marginally reduced to encourage the maintenance of resilient networks. In the case of telecommunications infrastructure that has already been installed, regulators may consider making continued use of the bandwidth spectrum assigned to telecommunications carriers, conditional upon submission and execution of a plan to ensure that a sufficient portion of their networks will be appropriately upgraded.

▸ (continued on page 10)

[3] Economic Commission for Latin America and the Caribbean (ECLAC), The Caribbean Outlook, 2018 (LC/SES.37/14/Rev.1), Santiago, 2018.
[4] Since 2015, this framework has been used by ECLAC in its DaLA assessments as a framework for reconstruction recommendations

▸ (continued from page 9)

DAMAGE AND LOSS ASSESSMENT RECOMMENDATIONS FOR MAXIMIZING THE RELIABILITY OF THE TELECOMMUNICATIONS SECTOR

Various measures can be used to reduce the most frequent risks associated with wired and wireless telecommunications activity. As wired telecommunication components are typically above ground, the risk of damage can be reduced in two ways. The first and costlier option is burying most of the network cables underground to protect them from damage caused by strong winds.[5] The second option suggests using a type of 'fiber to the node' (FTTN) approach where cables (usually fiber) are run underground to the switch/cabinet/node that serves several clients, while the remainder of the network remains above ground. In both instances, care must be taken to ensure the soil in which cables are buried is not prone to landslide or flooding. In instances where burying cables is not advisable, a higher standard or class of utility pole is recommended.[6]

Loss of commercial power remains the greatest threat to the continued operation of telecommunications services, particularly mobile services, during and after a disaster. Backup generators or batteries located at cellular sites are a useful way to reduce the risk of failure. However, it is important to consider security measures to ensure the safety of generators (a highly valuable resource after a disaster) as well as the potential logistical challenges to provide fuel for such generators.

The elevated investment costs for ensuring a more resilient network with lower risk of failure can be balanced by the benefit of more rapid recuperation in the possible event of a hurricane. ECLAC, in various of its assessments, has noted that estimated losses from the non-provision of telecommunication services for one to three months after a disaster are significant,[7] thus any efforts to mitigate similar losses should prove valuable.

PREPAREDNESS

Preparedness refers to the knowledge and capacities developed by governments, businesses and communities to anticipate, respond to, and recover from the effects of a natural hazard or disaster.

The ECLAC publication "Strengthening cooperation between telecommunications operators and national disaster offices in Caribbean countries" provides many insights into what can be done in terms of preparedness related to disasters, thus only four salient recommendations will be presented here.

First, the establishment of a cellular-phone based warning system can play an important role in providing early warning to the public about an oncoming disaster. The system involves sending a warning text message to users of mobile phones within the geographic area that is under threat of disaster. The implementation of this technology would require investment on the part of mobile phone operators, and the development of a protocol for its use by disaster management agencies or authorities.

Second, immediately after a disaster, one of the most serious challenges reported was the lack of communication between various departments and offices to allow for the transmission of clear directives. This condition is worse in cases where the disaster is more serious. As a remedy to this, the use of satellite phones is encouraged as a safeguard. As satellite phones and their subscriptions are relatively expensive, such devices should only be given to those with the authority to make decisions under post disaster circumstances.

Third, television and radio broadcasts, can provide useful support for one-way communication of information before and after a disaster. Where possible, the government can make public service announcements via a specific frequency (preferably AM in the case of radio). This practice, if implemented and widely reinforced before an emergency, can prove to be highly effective in maintaining a controlled response from the public after a disaster or for sharing helpful information such as the location of new shelters or relief supplies.

Finally, a disaster response plan can be prepared and reviewed by each telecommunications service provider (in fact by all organizations seen as essential for post disaster response) a few months before the hurricane season. The revision of this plan ensures that all persons involved are reminded of their roles and responsibilities and that the relevant equipment (e.g. backup generators) are in working condition. This activity must be done with sufficiently in advance to address any potential issues that may be discovered.

FINANCIAL PROTECTION

Financial protection attempts to create strategies to protect governments, businesses and households from the economic impact of a disaster.

[5] An activity that should be undertaken in collaboration with the electricity company and any other potential stakeholders, so as to ensure that all cables are run efficiently.

[6] Utility poles are often owned and managed by electric companies, in these instances an arrangement to split the cost of procurement or installation for the benefit off all parties involved is encouraged.

[7] FOCUS Magazine 2018, Issue 1.

Governments can ensure that financial protection is maintained by telecommunications service providers through the use of insurance facilities that cover potential damages and losses related to disasters. Alternatively, a disaster fund or credit line may suffice to ensure that telecommunications companies have access to finances for use in reconstruction and recovery efforts.

RESILIENT RECOVERY

Resilient recovery is emphasized as an avenue to improved resilience in the affected areas. A disaster, despite its negative effects, provides an opportunity for affected islands to update, renew and reorganize various systems in place within the telecommunications sector.

The destruction of old infrastructure provides difficult yet valuable experiential learning that should motivate more appropriate replacement. Inclusion of telecommunications service providers in the post disaster response process can prove to be a wise move, as a key player is provided a seat at the planning table during a crucial time for the society. In general, the relationship between telecommunications carriers and national disaster offices is an important one and can be further studied within ECLAC's body of published work.

Taken together, the pillars mentioned above provide a framework that can apply not only to the recurring threat of tropical cyclones, but to any Caribbean country's long-term imperative to mitigate and adapt to the effects of climate change and sea-level rise. ■

FOSTERING YOUTH PARTICIPATION IN DEVELOPMENT PROCESSES THROUGH INFORMATION AND COMMUNICATION TECHNOLOGIES

Lydia Rosa Gény*

The Caribbean today is home to nearly 7.5 million youth comprising almost 17 per cent of the subregion's total population.[1] Caribbean youth constitute a critical asset for development, not only because of their political importance, but also because of their role in modern societies. Their entitlement to participate in decision-making processes that affect their lives is a fundamental human right enshrined in the Universal Declaration of Human Rights, among other international and regional legal and policy frameworks.

Information and Communication Technologies (ICT) could become a powerful tool to facilitate youth engagement at national and subregional levels.

CARIBBEAN YOUTH NETWORKS

In the subregion, there are several youth networks and institutional mechanisms that facilitate the participation, organization, mobilization and interaction of young people, among which are the Caribbean Regional Youth Council (CRYC), the CARICOM Youth Ambassadors Corps (CYAs), the Commonwealth Youth Council (CYC), the University of the West Indies Students Today, Alumni Tomorrow (UWI STAT).

In addition to these, there is a host of other networks that complement the work being done by national youth councils in many countries, by giving youth a voice when such structures do not exist. These networks include the United Nations Population Fund (UNFPA) Youth Advisory Group, the SDG Youth Ambassadors, the Caribbean Youth Environment Network (CYEN) and the Commonwealth Youth Peace Ambassadors Network (CYPAN) - just to name a few.

Despite the existence of these institutional frameworks, youth participation faces several challenges. First, some frameworks are not fully functional, lack autonomy and proper resources, or may no longer exist. Second, overlaps tend to occur between different youth frameworks, for instance with the same youth representatives sitting on different youth mechanisms. This duplication of mechanisms accentuates the competition to request resources (which are already limited) from government entities in charge of youth related issues. Third, some frameworks do not reflect the diversity of young people and their organisations. In particular, youth belonging to ethnic, linguistic or religious minorities, those with disabilities, young indigenous, young migrants, young refugees, or living in remote and rural areas, among others, are often not represented in those mechanisms. Fourth, the role of youth or their organisations is sometimes not clearly defined in the design, implementation, review and follow-up of national youth policies, national development plans or related programmes.

Overall, there is an absence of a multi-sectoral coordination mechanism in development programming for youth at the national and subregional levels that could ensure that youth issues are mainstreamed in policies and programmes in each Caribbean country. This gap reflects the lack of a platform that guarantees meaningful participation of young people. Information and Communication Technologies (ICT)[2] could fill part of this gap.

Embracing ICT is particularly important for Caribbean countries, which are often multi-islands States or territories with small populations which face physical connectivity challenges.[3] According to the International Telecommunication Union (ITU),[4] the subregion has a moderate performance (See Table 1) based on the ICT Development latest report which compares global ranking of 176 countries.

More specifically, in terms of the three sub-indices scores of which the Index is composed, concerning ICT access, use and skills the ITU report highlights that Caribbean countries are performing relatively well, especially in terms of the indicators related to access and skills. However, much more could be done to improve ICT use by increasing the number of inhabitants that could benefit from mobile-broadband and Internet, in particular young people.

THE YOUTH DIALOGUE SERIES

Making better use of ICT for promoting youth engagement in development

* Lydia Rosa Gény is Gender Focal Point at the Economic Commission for Latin America and the Caribbean, Subregional headquarters for the Caribbean, Port of Spain, Trinidad and Tobago.

[1] Camarinhas, Catarina and Dwynette D. Eversley (2018), Caribbean synthesis report on the implementation of the Lisbon Declaration on youth policies and programmes, ECLAC Studies and Perspectives Series – The Caribbean.

[2] Information and Communication Technologies (ICT) include the Internet, fixed-telephone, mobile cellular telephones, computers, fixed and mobile broadband networks and other platforms, applications and services enabling users to access and use and be connected, exchange and communicate.

[3] Economic Commission for Latin America and the Caribbean (ECLAC), The Caribbean Outlook, 2018 (LC/SES.37/14/Rev.1), Santiago, 2018., p.18.

[4] The ICT Development Index (IDI) comprises many indicators and monitors and compares ICT development across 176 countries, including 16 Caribbean countries. The 11 indicators are related to: ICT access: 1. Fixed-telephone subscriptions per 100 inhabitants; 2. Mobile-cellular telephone subscriptions per 100 inhabitants; 3. International Internet bandwidth (bit/s) per Internet User; 4. Percentage of households with a computer; 5 Percentage of household with Internet access; ICT use: 6. Percentage of individuals using the Internet; 7. Fixed-broadband subscriptions per 100 inhabitants; 8 Active mobile-broadband subscriptions per 100 inhabitants; and ICT skills: 9. Mean years of schooling; 10. Secondary gross enrolment ratio; and 11 Tertiary gross enrolment ratio in International Telecommunications Union (ITU), Measuring the Information Society Report 2017- Volume 1, p.27

Table 1. ICT Development Index (IDI) 2017 rankings and scores of Caribbean countries

2017 IDI Rank	Country	IDI Score 2017
34	Barbados	7.31
37	Saint Kitts and Nevis	7.24
57	The Bahamas	6.51
68	Trinidad and Tobago	6.04
73	Grenada	5.80
76	Antigua and Barbuda	5.71
77	Dominica	5.69
82	Saint Vincent and the Grenadines	5.54
88	Suriname	5.15
98	Jamaica	4.84
104	Saint Lucia	4.63
106	Dominican Republic	4.51
120	Belize	3.71
124	Guyana	3.44
137	Cuba	2.91
168	Haiti	1.72

Source: ITU, Measuring the Information Society Report 2017- Volume 1, p.31.

processes is in synergy with the recently adopted United Nations Youth Strategy: 'Youth 2030, working with and for young people'.

The United Nations Youth Strategy especially requests the UN system to become a leadership example in terms of youth platform, serving as a channel for input and feedback from young people.

Ahead of the adoption of the strategy, the ECLAC Subregional headquarters for the Caribbean decided to leverage the use of ICT in order to meaningfully involve Caribbean youth in preparation for the Caribbean Forum on Population, Youth and Development, which took place from 24 to 26 July 2018, in Georgetown, Guyana.[5] A series of interactive WebEx meetings called 'Youth Dialogues' were hosted by ECLAC Caribbean, with the support of the Caribbean Regional Youth Council (CRYC), the CARICOM Youth Ambassadors Corps (CYAs), the University of the West Indies Students Today, Alumni Tomorrow (UWI STAT), CARICOM Secretariat, the Caribbean Development Bank (CDB), and the United Nations Population Fund (UNFPA). These interactive sessions were aimed at providing an inclusive and safe space for young people residing in 29 Caribbean member countries.[6] Youth representatives were invited to review their national youth policies and related frameworks, which enabled them to share their views and perspectives, while identifying good practices and challenges they face in the development, implementation and review of current youth policies and related frameworks in the Caribbean. The Youth Dialogues were also aimed at facilitating the preparation of the different sessions and panels of the Forum, and included the contribution of youth leaders in the identification of topics and speakers for the different panels, as well as the organization of side-events and networking sessions.

Without ICT, it would not have been possible to have those youth dialogues. In fact, ten preparatory youth dialogues took place during May to July, with sessions sometimes lasting for more than 5 hours. These online dialogues, which could be accessed through computers or mobile phones, addressed several thematic areas which were organized by session: Session 1 and follow-up meetings focused on the youth contribution to the Caribbean Forum and the organization of the Youth special session on mobilizing young people in the response to the 2030 Agenda; Session 2 was aimed at reviewing National Youth Policies and related frameworks, including the implementation of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs), with a youth lens; Session 3 looked at the main conclusions and recommendations emanating from Sessions 1 and 2. After the Caribbean Forum, a debriefing session also took place to receive feedback and identify lessons learned for a future event.

For the Youth Dialogues on the review of national youth policies and related frameworks, young leaders and representatives were invited to participate online and share their views on their national youth policies and related frameworks. The other sessions were open to all youth leaders and practitioners with the purpose of ensuring inclusiveness, meaningful participation, broad-based consultation, and peer learning. Based on the Youth Dialogues, a list of preliminary recommendations was prepared by a Subcommittee that was also meeting online. This Subcommittee was constituted on a voluntary basis and included 15 youth representatives, ensuring gender parity, from across the Caribbean. The recommendations were reviewed by all youth representatives through the online sessions and then presented in person at the Caribbean Forum on Population, Youth and Development, on 25 July 2018.

▸ (continued on page 14)

[5] Caribbean Forum on Population, Youth and Development: https://www.cepal.org/en/events/caribbean-forum-population-youth-and-development

[6] Anguilla, Antigua and Barbuda, Aruba, the Bahamas, Barbados, Belize, Bermuda, British Virgin Islands, Cayman Islands, Cuba, Curaçao, Dominica, Dominican Republic, Grenada, Guadeloupe, Guyana, Haiti, Jamaica, Martinique, Montserrat, Puerto Rico, Saint Lucia, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Sint Maarten, Suriname, Trinidad and Tobago, Turks and Caicos Islands, and the United States Virgin Islands.

▸ (continued from page 13)

FOSTERING YOUTH PARTICIPATION IN DEVELOPMENT PROCESSES THROUGH INFORMATION AND COMMUNICATION TECHNOLOGIES

The final outcome document of the Forum reflected a negotiation process among youth leaders and the delegations of Caribbean countries.[7] The event, including this negotiation session, was livestreamed through the ECLAC Caribbean Facebook Page in order to continue ensuring online participation.

This online platform- Cisco Webex-, as well as the associated social media group related to the dialogues, will continue to be used for the planning of future events, including other major events, such as the Forum of the Countries of Latin America and the Caribbean on Sustainable Development (22-26 April 2019) and the Regional Conference on Women in Latin America and the Caribbean (4-8 November 2019), in order to have continuing participation of youth at all stages.

Through the Youth Dialogues, Caribbean youth recommended governments to use live streaming and dynamic, relevant and interactive digital media and ICT in public policy consultation in order to facilitate youth engagement.

They also encouraged Caribbean governments to expand computer literacy training and free-wifi in public spaces in order to foster youth online interaction and learning. Related to this is their recommendation to promote the use of ICT by teachers, educators and students in classrooms, by equipping them with the necessary tools and trainings, and connecting or improving access to internet in schools, especially in underserved communities, rural and remote areas, with incentives to the private sector to connect those areas, which are still facing limited access to electricity. National policies should therefore be reviewed in order to encourage the use of ICT and reflect the latest advancement in this sector in development planning and programmes.

Caribbean youth also suggested supporting the maintenance and utilization of a comprehensive youth-friendly web platform that includes the existing portals for youth in the Caribbean to foster collaboration, coordination and synergies among different actors. This can include youth leaders, youth practitioners, governments, civil society organizations, the private sector, international and regional organizations, and academic institutions. The Caribbean Regional Youth Alliance Network Portal[8] which is a regional portal to enhance youth groups and volunteer organizations created by the Caribbean Regional Youth Council (CRYC) and the ECLAC Youth Observatory for Latin America and the Caribbean[9] (JUVELAC), which provides a repository of policy and programme database classified by topic and countries, could be the starting point. The content of this web platform could include the following content: all Caribbean national youth policies and related international, regional and subregional frameworks; efforts made by Caribbean countries and youth-led organizations in the implementation of the 2030 Agenda for Sustainable Development and the 17 SDGs in the subregion; a Caribbean youth-friendly SDG virtual map; youth data; the contact of all youth led-organizations/ networks and youth government departments in the Caribbean; as well as updates on trainings, meetings, conferences on youth-related issues in the Caribbean and abroad.

Finally, the youth also encouraged governments to establish a digitalized registry of all youth organizations in each country in order to facilitate the sharing of information, participation and inclusion of youth in consultation processes, as well as the gathering of up-to-date information for their participation in regional and global development processes.

CONCLUSION

No UN agency or Caribbean country should discuss sustainable development "without partnering with young people and ensuring they are not only heard but understood, not only engaged but empowered, and not only supporting but leading global efforts and processes". [10]

The 2030 Agenda for Sustainable Development states that "the spread of information and communications technology and global interconnectedness has great potential to accelerate human progress, to bridge the digital divide and to develop knowledge societies."[11] It also underscores the need to include young men and women as "critical agents of change",[12] and promises to leave no-one behind.

The Caribbean Youth Dialogues illustrates that despite limited resources, but with access to ICT and mutual interests, it is possible to meaningfully engage young people across the Caribbean who are eagerly motivated to significantly participate in development frameworks, including the 2030 Agenda for Sustainable Development. Online platform such as this one should be encouraged and promoted locally and nationally in order to have Caribbean youth as benefiters of, and partners with, the governments' s efforts towards achieving sustainable development with equality. ■

[7] Link to the outcome document of the Caribbean Forum on Population, Youth and Development: https://www.cepal.org/en/events/caribbean-forum-population-youth-and-development.
[8] http://www.caribbeanregionalyouthalliance.org
[9] https://dds.cepal.org/juvelac/
[10] United Nation Youth Strategy 2030, p.6. Accessible at: https://www.un.org/ecosoc/sites/www.un.org.ecosoc/files/18-00080_un-youth-strategy_web.pdf
[11] UN General Assembly, Transforming our world: the 2030 Agenda for Sustainable Development, 21 October 2015, A/RES/70/1. para. 15.
[12] Idem, para. 51.

RECENT AND UPCOMING MEETINGS

2018

JULY

24 - 26 July 2018
Caribbean Forum on Population, Youth and Development - Georgetown, Guyana

NOVEMBER

24 November 2018
Positive Community, Positive Role models - Cunupia, Trinidad and Tobago

27 - 29 November 2018
First regional dialogue in Latin America and the Caribbean "On the road to equality": 30 years of the Convention on the Rights of the Child - Santiago, Chile

List of Recent ECLAC Documents and Publications

Listed by Symbol Number, Date and Title

LC/TS.2017/155 Mar 2018
Planning for the 2020 round of population censuses in the Caribbean

LC/TS.2017/158 Mar 2018
Mechanisms to accelerate the implementation of the Sustainable Development Goals in the Caribbean

LC/CAR/2018/2 April 2018
Report of the twenty-seventh session of the Caribbean Development and Cooperation Committee

LC/CAR/2018/4 May 2018
Evaluation report of the workshop on the use of the updated ECLAC Disaster Assessment Methodology

The Magazine of the Caribbean Development and Cooperation Committee
ECLAC Subregional Headquarters for the Caribbean

PO Box 1113, Port of Spain, Trinidad and Tobago
Tel: 868-224-8000
E-mail: spou-pos@eclac.org

vrb.al/eclaccaribbean